

Remarks/Arguments

Claims 18 and 21-25 remain pending in the Application.

Claim 18 has been amended to recite that the polyurethane dispersion is applied by frothing. Support may be found at page 7, line 18 to page 8, line 1 which describe the frothing process. Claim 18 has been further amended to emphasize that the plastic molded substrate is formed by the injection molding process and that the backing layer does not allow strikethrough by the molded plastic substrate. (See page 3 lines 7-10, page 4 lines 10-13 and page 8, lines 17-19 for support.)

As an initial matter, the Examiner has repeatedly indicated that pouring-in-place or injecting foam precursors into a mold equates to injection molding to form a molded plastic substrate. This is simply not the case. Applicants respectfully call attention to the specification at page 3, lines 9-10 and line 22, which clearly indicates that those terms do not describe the same process (foam-in-place or injection molded behind; emphasis added). Again at page 4, lines 17-19, the specification recites, "this then provides a more preferred cloth material for "shoot-behind", high pressure molding procedures such as injection molding" (emphasis added).

Therefore, pour-in-place and injecting of foam formulations are excluded since "high pressure" molding would not allow a foam to expand. Beyond this, it is well known to those skilled in the art that the injection molding process is used to form plastic molded substrates by using heat and pressure to melt plastic pellets/powder/particles and injecting the melt into a mold. It should not be confused with the in-situ reacting and pouring of expanding precursors to form a foam (i.e. foam-in-place), such as is described in cited references Gill et al. (USP 5,124,368) and Ogawa et al. (USP 5,460,873).

Page 1, lines 25 and 26 of the specification of the present application provide a definition for "pour-in-place", that is "subsequent injection of liquid foam ingredients".

Further, trim panels are well known in the art as an article generally including three (3) layers; a cover layer, a foam layer and a molded plastic substrate. The panel may be used to trim, for instance, an automobile interior. Foam seating as described in the cited art would not be considered a trim panel and generally as formed does not include a molded plastic substrate, formed by the injection molding process, as part of its construction.

Turning to the rejections, the Examiner has rejected claim 18 as being unpatentable over Gill, et al. (United States Patent No. 5,124,368) in view of JP 02-143842.

The Examiner has characterized Gill, et al. as forming a trim panel including providing a laminate having a fabric with a polyurethane foam layer backing, placing said laminate in a mold and injecting a foam, which injection is equated with "injection molding of a plastic substrate". It is not believed that it is at all proper to stretch Gill, et al. and conclude that Gill, et al.'s step of injecting a foam is equivalent to injection molding of a plastic molded substrate.

Gill, et al. actually discloses the "pouring-in-place" of polyurethane formulations comprising "fluid reacting intermediates" behind an exterior covering, such as a fabric backed by a foam layer. See column 11, lines 16-47 of '368 wherein Gill, et al. sets forth the details of his "Pour-In Fabric Molding". Therefore, it must be appreciated that Gill, et al. was only prepared to expose his fabric-backed foam layer to another layer of "poured-in" foam and that such a system would provide no strike-through. This does not teach or suggest, however, that one could utilize a cloth backed by a polyurethane dispersion and **injection mold behind** the polyurethane dispersion (at relatively higher pressures as compared to a "poured-in" system) without the use of

a barrier film, to control strike-through. The Examiner admits that "Gill, et al. ('368) does not teach that said polyurethane backing is a polyurethane dispersion that is applied without the use of adhesives or flame lamination."

Turning to the secondary reference of JP 02-143842, this disclosure appears to be directed at applying a filled resin dispersion of polyurethane to a surface sheet. The reference is silent as to injection molding a plastic molded substrate behind said dispersion layer without the use of barrier film (amended claim 18).

Amended claim 18 recites three layers that may form a trim panel, a cloth, a polyurethane dispersion backing layer and an injection molded plastic substrate. Neither Gill, et al., or JP 02-143842 teach or suggest the presence of this third layer, an injection molded plastic substrate. Gill, et al. is directed at pour-in-place foam behind an exterior covering. The Japanese reference discloses a filled polyurethane resin on a surface sheet (2 layers, neither formed by injection molding).

The Examiner further states at page 3 of the Office Action mailed February 24, 2006, that it would have been obvious for one of ordinary skill in the art to have provided the polyurethane dispersion as taught in JP 02-143842 to form a foam layer in the process of Gill, et al. However, the object of Gill, et al. is to provide a foam formulation itself which does not strike through due to the specific ingredients used (note: Abstract, "the formulation employs a hydrophilic polyhydric compound to help the reacting balance that minimizes penetration of the exterior covering which also stabilizes the rising foam against shear collapse without excessively tightening the foam"). Thus, Gill, et al. teaches against the need for the dispersion layer of the Japanese reference, and the references should not properly be combined.

Claims 18 and 23-24 are also rejected under 35 U.S.C. 103(a) as being unpatentable over Gill, et al. in view of Gribble, et al. (United States Patent Application Publication No. 2004/0109992).

The Examiner has stated that Gribble, et al. (United States Patent Application Publication No. 2004/0109992) teaches the claimed process of applying a polyurethane dispersion to a fabric substrate without adhesives or flame lamination and equates the **injection molding** of a plastic substrate on said dispersion to "hot lamination molding of a polyurethane film" through a nip roller after exiting the drier oven. (See paragraph [0011] of Gribble, et al.)

Gribble, et al. is silent and does not teach **injection molding a molded plastic substrate on a polyurethane dispersion** without the use of a barrier film applied to said polyurethane backing layer of said cloth. Gribble, et al. simply recites "a substrate", but defines such as **the surface to which the frothed dispersion is directly applied**, in other words only 2 layers. (See Abstract and paragraphs [0001] and [0008] of Gribble, et al.) Gribble, et al. certainly do not teach or suggest **injection molding** onto a polyurethane dispersion nor the elimination of the need for a barrier film to prevent strike-through of the molten plastic through the fabric layer. Molding processes such as shoot-behind (injection molding) are recited at page 3, lines 7-10; page 4, lines 10-15; page 8, lines 13-19 and page 10, lines 10-12 of the specification of the present application.

In [0007], which the Examiner cites, Gribble, et al. is actually describing a process that "avoids the need" for flame lamination, adhesive or a non-permeable layer associated **with the fabric substrate**, and not a third layer plastic molded substrate formed by the injection molding process.. In other words, Gribble, et al. is teaching at this section of the disclosure that film must

be placed on the fabric to prevent strike-through by the dispersion. In the present invention, it has been found that such film is not necessary, and that **strike-through from injection molding a plastic substrate behind the foam dispersion** may be avoided via the use of the polyurethane dispersion.

In paragraph [0011], Gribble, et al. describes the "hot lamination of a thin film" as a means to "enhance the coefficient of friction at the surface" of the foam. In other words, laminating a thin film to the backside of the foam. As alluded to above, this should not be confused with the injection molding of a plastic molded substrate to the foam dispersion by what may be understood as a "shoot-behind" molding process. Again, Gribble, et al. is silent regarding **injection molding behind** the dispersion layer.

Thus, neither Gill, et al. nor Gribble, et al. teach or disclose injection molding a plastic substrate behind a polyurethane dispersion layer. Gill, et al. teaches against a dispersion layer and Gribble, et al. simply backs a textile substrate with a dispersion, but does not include an injection molded plastic substrate therebehind to form a trim panel.

The rejection of dependent claims 21 and 22 in further view of Ogawa, et al. (United States Patent No. 5,460,873) is believed to be overcome by the above arguments against Gill, et al. and Gribble, et al. and their combination, or by the arguments against Gill, et al. and JP 02-143842 and their combination.

The same is believed to be true for dependent claims 23, 24 and 25.

Claims 18 and 23-24 are also rejected under 35 U.S.C. 103(a) as being unpatentable over Gribble, et al. in view of Applicant's Admitted Prior Art (APA).

The Examiner, in item 7, page 4 of the Final Office Action mailed November 7, 2005, admits that Gribble, et al. "does not teach injection molding a plastic layer to said foam backed fabric". Applicants' Admitted Prior Art, identified by the Examiner as page 1, lines 24-27 of the application, recites "[a]n alternate method uses the laminated cloth, particularly a knitted version, applied directly to a mold and shaped by vacuum or by the subsequent injection of **liquid foam precursors** (emphasis added) on the foam layer". This section of the specification goes on to point out that this was reference to "pour-in-place" processes as described in United States Patent Nos. 4,806,088 and 4,046,611 and 4,637,689. This is simply not a reference or admission that prior art existed with respect to **injection molding of a plastic substrate** to cloth having a polyurethane dispersion as a backing layer without the use of a barrier film. As noted earlier, it is clear in the Specification of the present Application that pour-in-foam processes are distinguished from the injection molding process for a plastic molded substrate.

None of the cited references, nor the Applicants' Admitted Prior Art, taken alone or in combination, teach or suggest forming a molded plastic substrate using the injection molding process on said polyurethane (dispersion) backing layer of a cloth. In other words, there is no teaching of a three-layer construction in which one of the layers is a plastic molded substrate formed by the injection molding process, wherein the polyurethane dispersion on the backing layer does not allow strike-through of the cloth by the injection molded plastic substrate.

Claims 18 and 21-24 are also rejected under 35 U.S.C. 103(a) as being unpatentable over Gribble, et al. in view of Ogawa, et al. (United States Patent No. 5,460,87).

Ogawa, et al. is directed at a composite covering layer comprising a permeable fabric and a thin layer of **latex** foam bonded to the fabric. An integrally **foamed** article may be formed by **pouring a liquid material** onto the latex layer.

Once again, the reference is not directed at a trim panel and does not teach or suggest forming a molded plastic substrate using the injection molding process, as applied to a cloth containing a polyurethane dispersion, which dispersion does not allow strike-through of the cloth by the injection molding plastic substrate. Combining Gribble, et al. and Ogawa, et al. does not make up for the deficiencies of either reference. The combination simply does not read on the (pending) claimed method.

In consideration of the amendments to the claims and the remarks hereinabove, Applicants respectfully submit that all claims currently pending in the Application are believed to be in condition for allowance. Allowance at an early date is respectfully solicited.

In the event the Examiner deems personal contact is necessary, please contact the undersigned attorney at (603) 668-6560.

In the event there are any fee deficiencies or additional fees are payable, please charge them (or credit any overpayment) to our Deposit Account No. 50-2121.

Respectfully submitted,

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